

**ABSTRACT OF THE DISCLOSURE**

A novel human brain-derived potassium channel polypeptide is described which is developmentally regulated and tissue-specific to differentiated neurons. A full length cDNA  
5 which encodes the novel potassium channel polypeptide is disclosed as well as the interior structural region and the amino acid residue sequence of the human brain potassium channel biomolecule. Methods are provided to identify compounds that modulate the biological activity of the potassium channel biomolecule and hence regulate neurophysiology.

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